

Oklahoma State Pension Commission Retirement System

Summary of Actuarial Reports

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System Summary - Characteristics and Assumptions

- Retirement System comprises seven plans (Teachers, OPERS, Firefighters, Police, Law Enforcement, Judges, and Wildlife)
- Information based on July 1, 2008 Actuarial Valuation Reports from Actuaries¹ and System Financial Statements
 - All plans employ Entry Age Normal funding method
 - a conservative funding schedule
 - All plans employ similar asset valuation method (smoothed value)
 - Smooths asset gains and losses over time
 - Investment return assumptions range from 7.5% to 8.0%
 - All plans have in place long term amortization schedules to fund the Unfunded Accrued Liability
 - Employee and Employer contribution rates vary by plan

1. Buck Consultants, Milliman Consultants and Actuaries, and Gabriel, Roeder, Smith & Company

2. Greenwich Associates survey, 2008

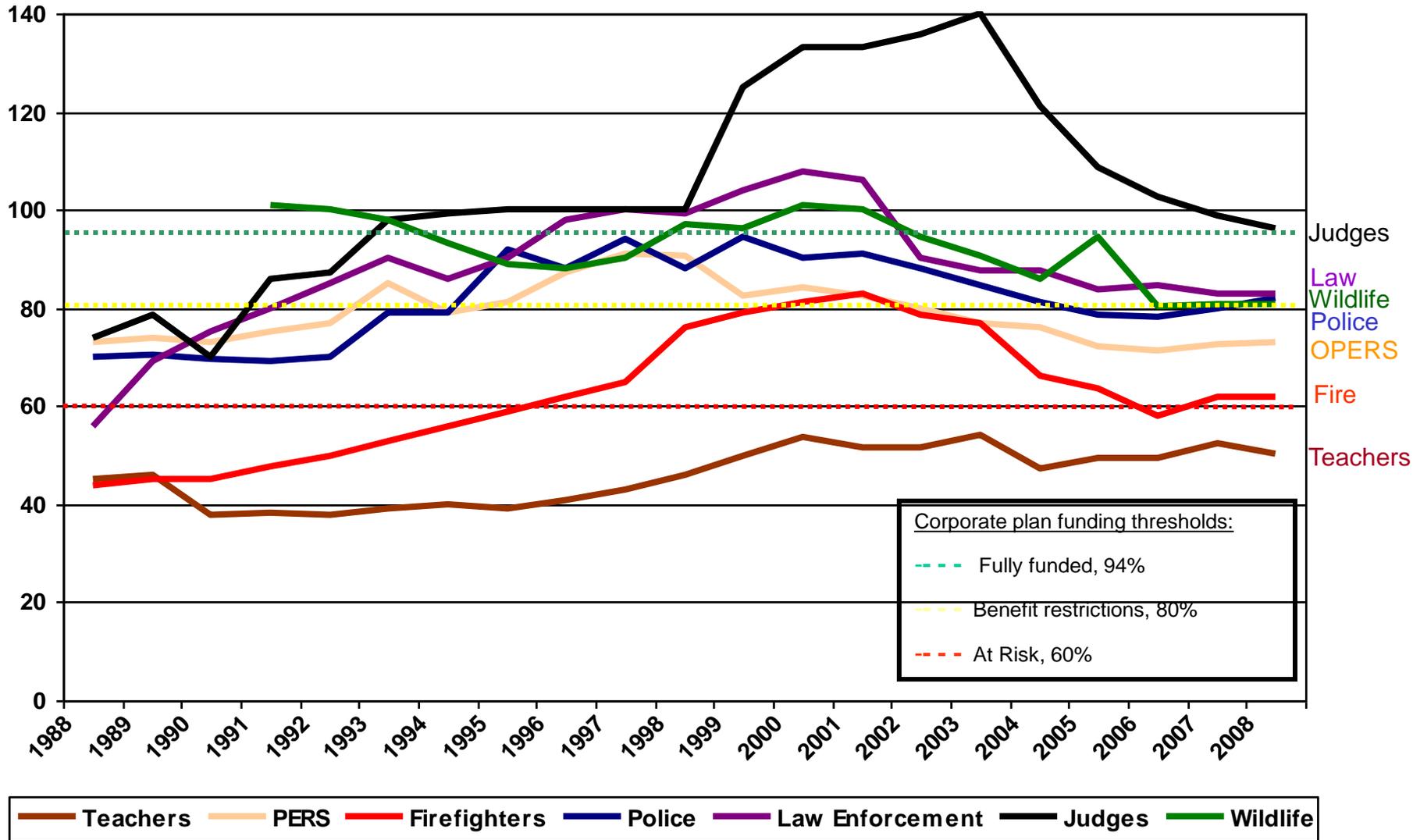


System Summary

- Funded status of the plans remained relatively stable since the July 2007 valuations
 - Asset declines from the second half of 2008 not reflected yet
 - Average of plans' Actuarial value return was 7.9% for the fiscal year ending June 30, 2008
 - Average of plans' Market value return was -4.9% for the fiscal year ending June 30, 2008
- Asset smoothing will help dampen the losses in next year's valuations
 - Losses recognized over the next 5 years
- Teachers' plan remains the largest and the most poorly funded of the seven plans
 - \$18 billion in liabilities, \$9 billion in assets, 50% funded
 - Current contributions do not cover annual Normal Cost (cost of one year's additional benefits), despite an increase in Employer contribution rates
 - Actuaries projected that the Teachers' plan will not reach 80% funded until after the year 2050



Funded Status History – Actuarial



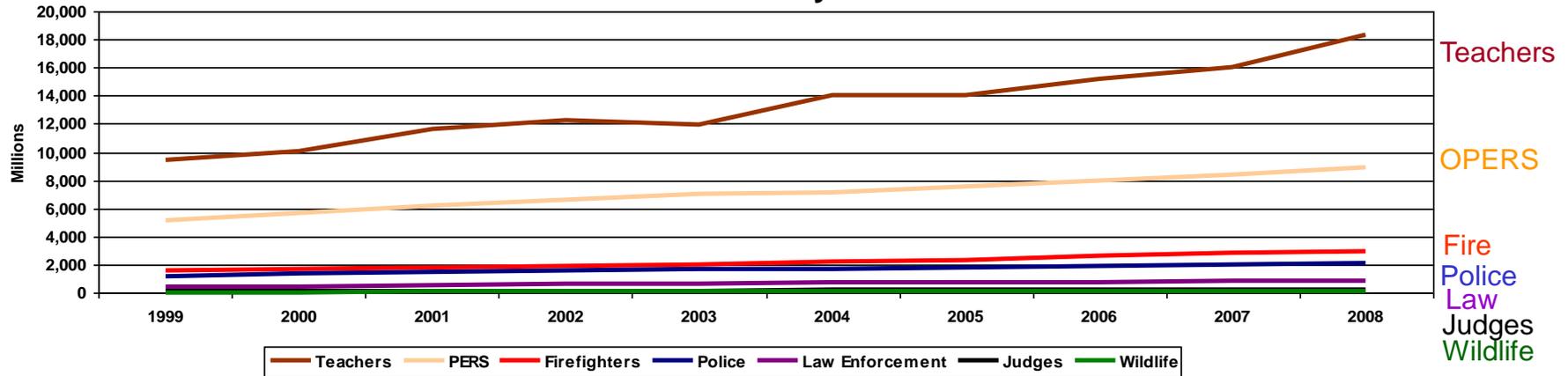
Source: 1999 and earlier: R.V. Kuhns & Associates,
 2000 and later: Buck Consultants, Milliman Consultants and Actuaries, and Gabriel, Roeder, Smith & Company



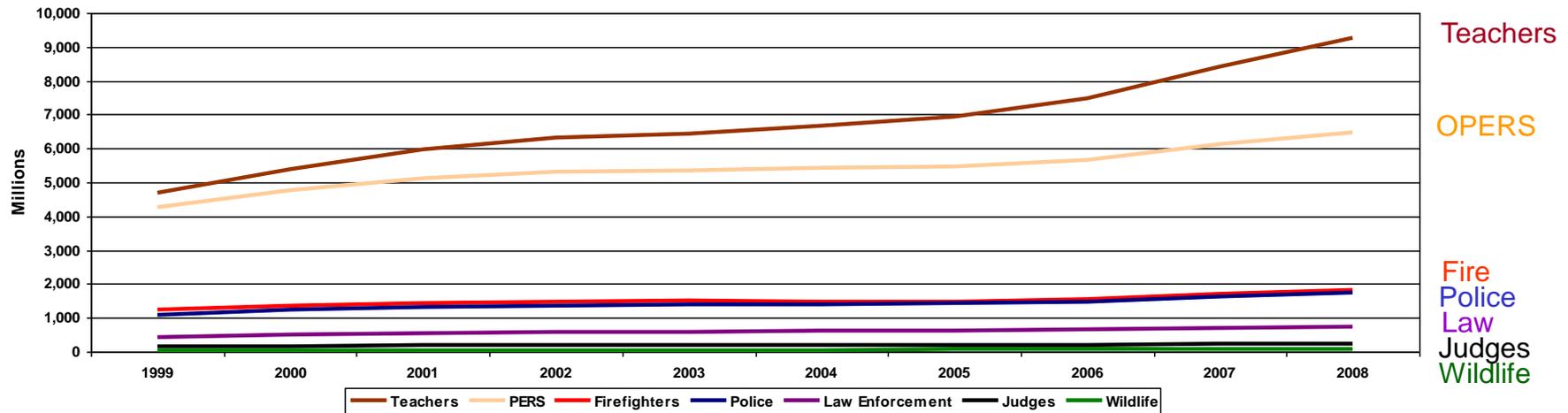


Liability and Asset History - Actuarial

Actuarial Liability



Actuarial Value of Assets



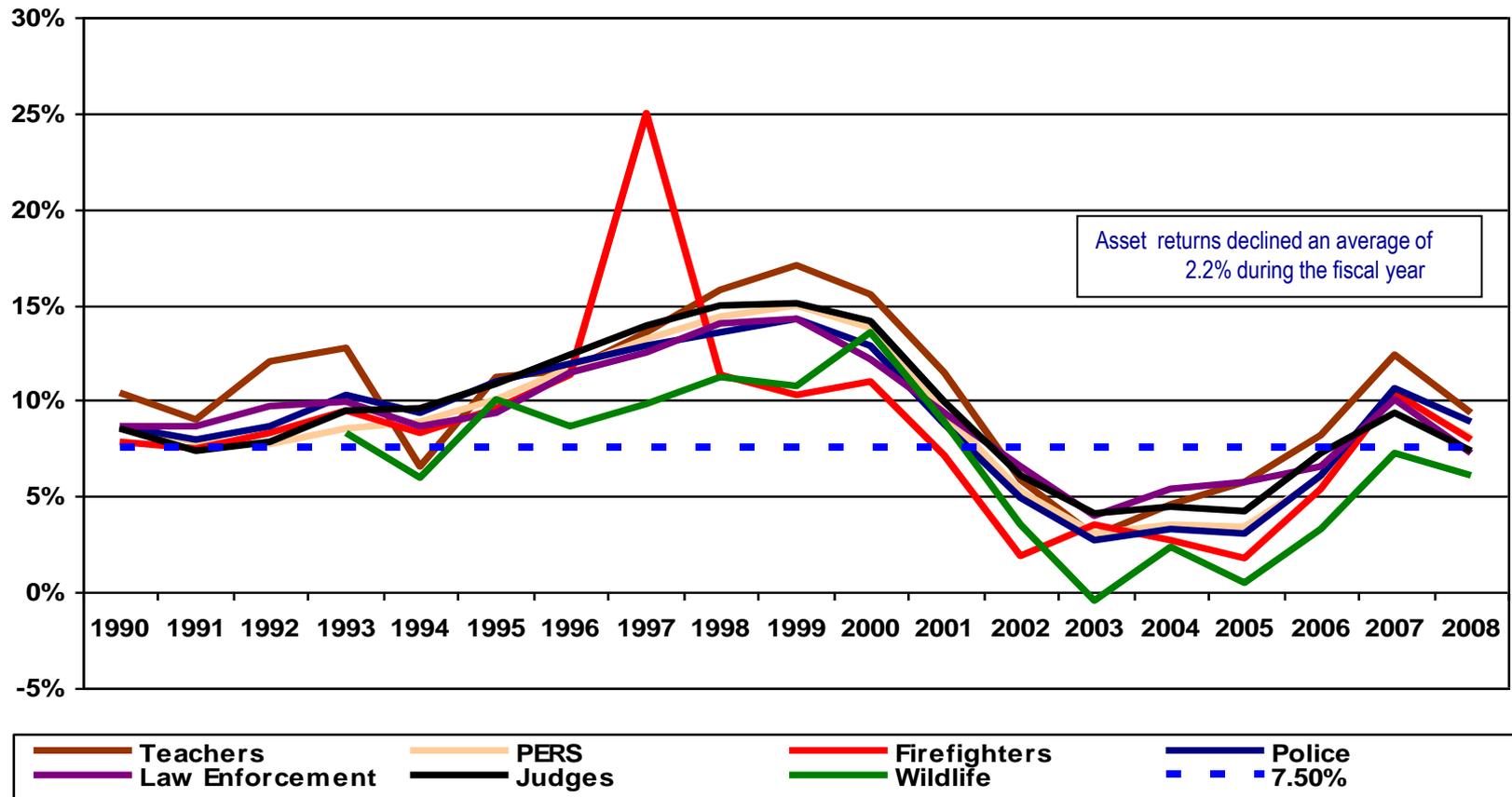
Source: 1999 and earlier: R.V. Kuhns & Associates,
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Investment Return – Actuarial Value

Annual Rates of Return



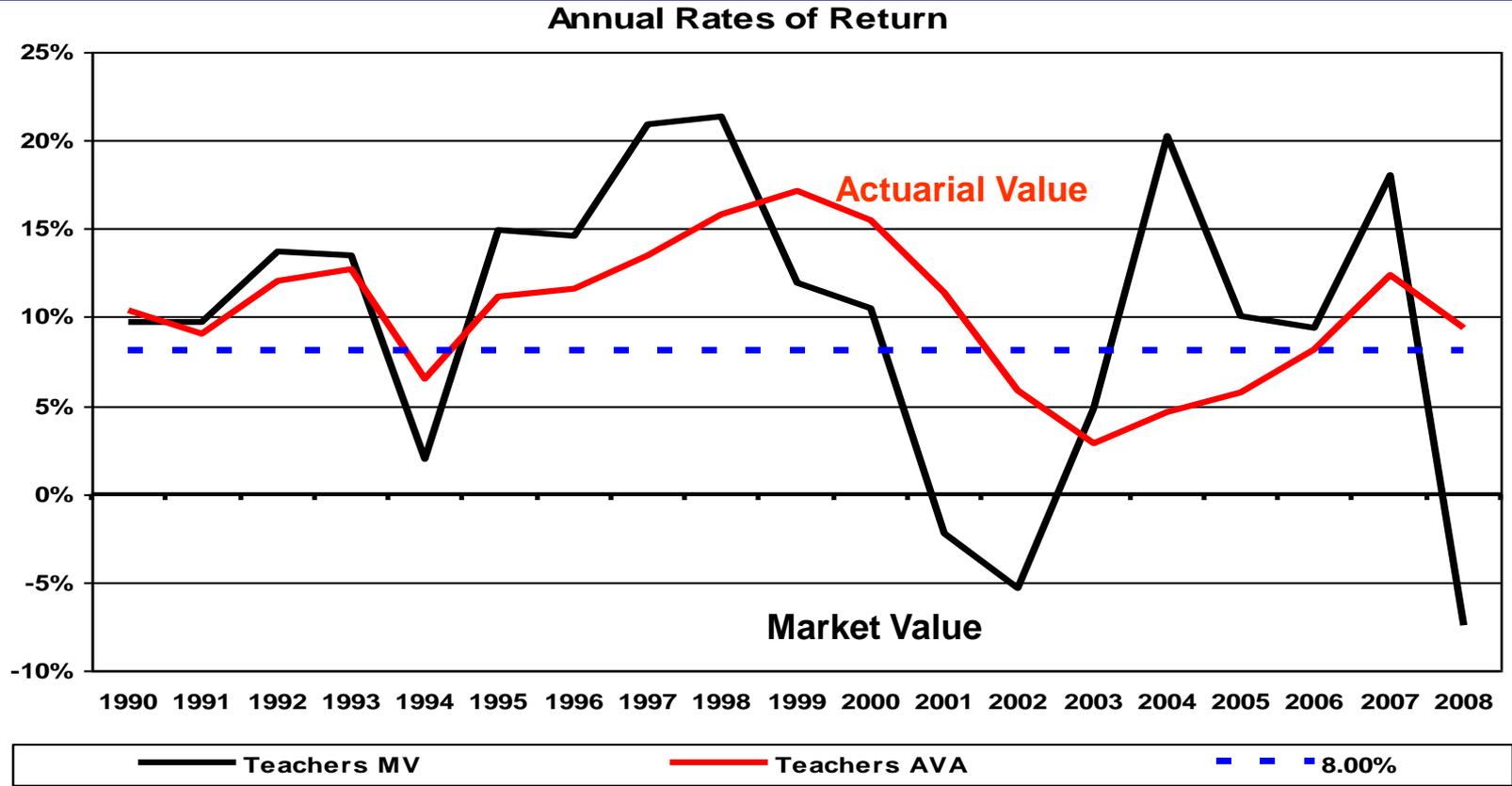
- Asset declines that happened after June 2008 are not reflected this year
- Asset smoothing methods will help dampen the losses in next year's valuations

Source: 1999 and earlier: R.V. Kuhns & Associates,
2000 and later: Buck Consultants, Milliman Consultants and Actuaries, and Gabriel, Roeder, Smith & Company





Investment Return – Teachers’ Plan



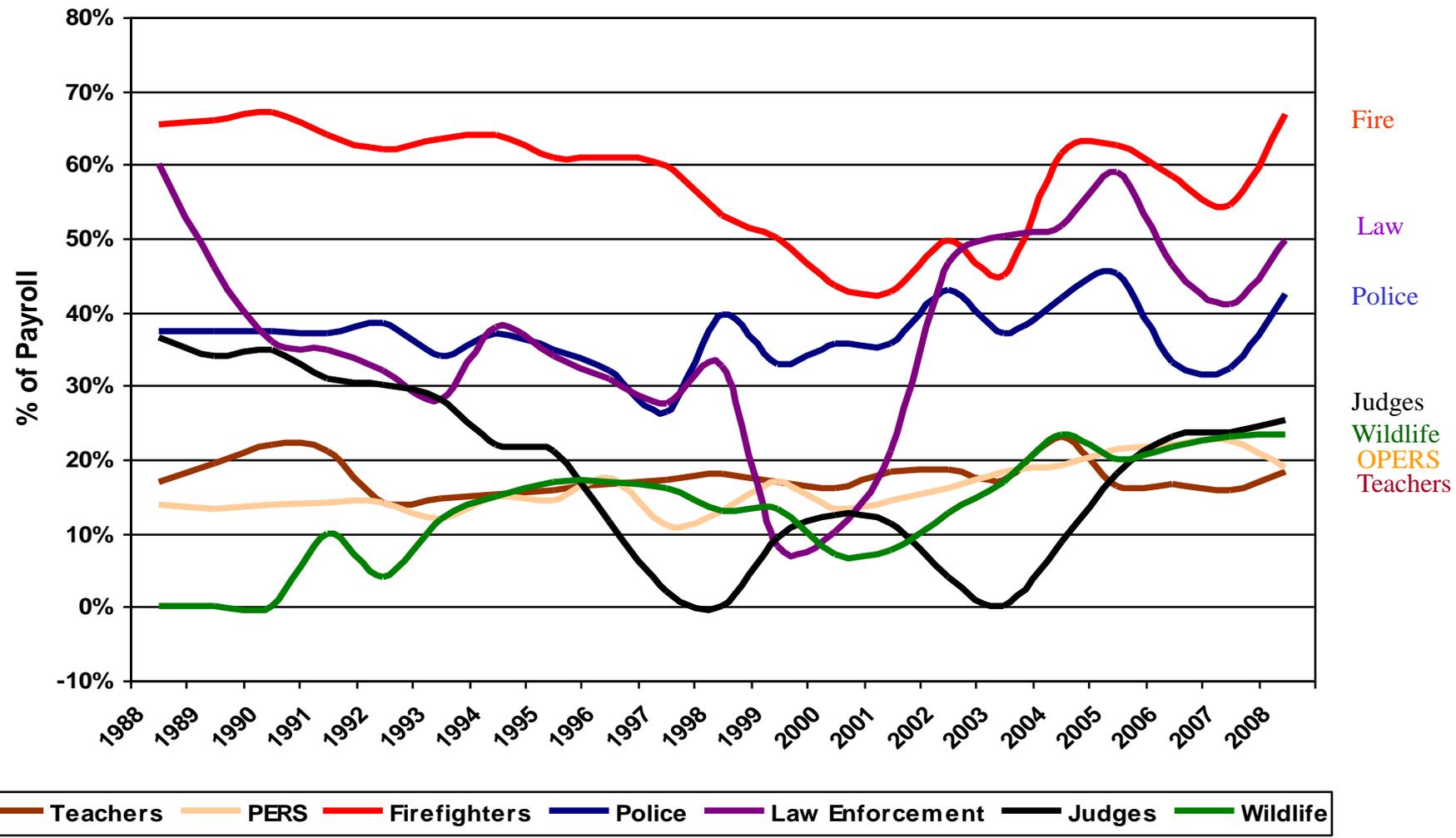
- Market Value may have another steep decline as of next year’s June 30, 2009 valuation
- Actuarial Value will fall, but not nearly as dramatically as MV, due to smoothing
- Losses will be reflected over the next 5 years even if market rebounds

Source: 1999 and earlier: R.V. Kuhns & Associates,
2000 and later: Buck Consultants, Milliman Consultants and Actuaries, and Gabriel, Roeder, Smith & Company





GASB 25 Total Employer Cost as % of Payroll



Source: 1999 and earlier: R.V. Kuhns & Associates,
2000 and later: Buck Consultants, Milliman Consultants and Actuaries, and Gabriel, Roeder, Smith & Company



Employer Contributions



Required Employer Contribution (assuming GASB 25 funding requirements)

	7/1/1999	7/1/2000	7/1/2001	7/1/2002	7/1/2003	7/1/2004	7/1/2005	7/1/2006	7/1/2007	7/1/2008
Teachers*	\$455.3	\$451.5	\$556.2	\$585.1	\$534.8	\$722.1	\$535.2	\$575.7	\$590.5	\$714.4
OPERS	161.8	169.6	188.0	232.8	257.0	266.0	310.0	338.6	363.9	323.1
Firefighters**	57.0	62.0	63.1	76.5	73.7	106.7	118.3	146.8	147.3	157.8
Police**	34.7	53.0	54.9	71.7	63.5	73.8	85.4	95.1	100.5	102.6
Law Enforcement**	6.3	4.1	10.7	23.0	25.4	25.3	30.0	32.5	32.7	36.6
Judges	0.4	1.1	1.0	0.0	0.0	2.2	4.4	5.9	7.6	8.2
Wildlife	1.2	0.8	0.9	1.5	2.0	2.1	2.6	2.9	3.1	3.4
Total	\$716.7	\$742.1	\$874.8	\$990.6	\$956.4	\$1,198.2	\$1,085.9	\$1,197.5	\$1,245.6	\$1,346.1

Actual Employer Contribution

	7/1/1999	7/1/2000	7/1/2001	7/1/2002	7/1/2003	7/1/2004	7/1/2005	7/1/2006	7/1/2007	7/1/2008
Teachers*	\$275.9	\$328.2	\$364.9	\$362.0	\$375.4	\$405.8	\$459.5	\$535.9	\$597.0	TBD
OPERS	125.9	131.1	139.6	137.5	133.5	139.8	171.3	197.8	220.2	TBD
Firefighters**	61.6	65.7	68.8	72.6	22.8	82.2	82.3	117.5	83.1	TBD
Police**	37.7	40.0	42.2	44.2	23.9	48.7	50.0	56.4	56.1	TBD
Law Enforcement**	19.6	19.4	20.4	21.1	13.4	21.4	22.0	24.4	25.0	TBD
Judges	2.9	1.9	0.5	--	--	0.5	0.8	1.2	1.7	TBD
Wildlife	1.2	0.8	0.9	1.2	1.2	2.5	2.5	3.0	3.0	TBD
Total	\$524.8	\$587.1	\$637.3	\$638.6	\$570.2	\$700.9	\$788.4	\$936.2	\$986.1	TBD

Percent of Required Employer Contribution Actually Contributed

	7/1/1999	7/1/2000	7/1/2001	7/1/2002	7/1/2003	7/1/2004	7/1/2005	7/1/2006	7/1/2007	7/1/2008
Teachers	60.6%	72.7%	65.6%	61.9%	70.2%	56.2%	85.9%	93.1%	101.1%	TBD
OPERS	77.8%	77.3%	74.3%	59.1%	51.9%	52.6%	55.2%	58.4%	60.5%	TBD
Firefighters**	108.0%	105.9%	109.0%	94.9%	31.0%	77.0%	69.6%	80.0%	56.4%	TBD
Police**	108.7%	75.5%	76.9%	61.6%	37.6%	66.0%	58.5%	59.3%	55.8%	TBD
Law Enforcement**	311.3%	473.2%	190.7%	91.7%	52.8%	84.6%	73.4%	75.1%	76.5%	TBD
Judges	734.7%	170.0%	50.0%	n/a	n/a	22.7%	18.0%	20.3%	22.2%	TBD
Wildlife	100.0%	100.0%	100.0%	80.0%	60.0%	119.0%	96.2%	103.8%	97.1%	TBD
Total	73.2%	79.1%	72.9%	64.5%	59.6%	58.5%	72.6%	78.2%	79.2%	TBD

* Teachers plan contributions include State, Employer, and Federal funds

** Contributions include State and Agency or Municipality funds

Source: 1999 and earlier: R.V. Kuhns & Associates,
2000 and later: Buck Consultants, Milliman Consultants and Actuaries, and Gabriel, Roeder, Smith & Company



Contributions Rates – Employee and Employer

2008 Contribution Rates as a % of Payroll					
	Employee Rate	Employer Rate	State Mandated Rate	Federal Matching Funds	Total
Teachers	7.0%	7.55% / 8.35%*	5% of tax and lottery revenue	7% for positions paid by Federal grants	22.1%+
OPERS	3.5%	14.5%*			18.0%
Firefighters	8.0%	13.0%	34% of insurance premium tax		21.0%+
Police	8.0%	13.0%	17% of insurance premium tax + 26% of special fund		21.0%+
Law Enforcement	8.0%	10.0%	6.1% of insurance premium tax + 1.2% of drivers license tax		18.0%+
Judges	8.0%	7%*			15.0%
Wildlife	3.0%				3.0%

* on an increasing schedule

- Median Employee contribution rates are 5.0% if participating in Social Sec., 8.0% if not*
- Median Employer contribution rates are 8.5% if participating in Social Sec., 11.2% if not*

Source: July 1, 2008 Actuarial Reports by Buck Consultants, Milliman Consultants and Actuaries, and Gabriel, Roeder, Smith & Company

* Results from the Public Fund Survey Summary Findings for FY 2007, published November 2008 by the National Association of State Retirement Administrators



Summary of Major Plan Changes

System	Benefit Provisions	Assumption & Methods	Funding Methods	Legislative
Teachers		COLA assumption increased from 1% to 2%	Employer contribution increased to 7.55% / 8.35% per schedule	A 2% ad hoc cost-of-living (COLA) adjustment was provided to all retirees who retired before July 1, 2007
OPERS	SB1641 - Provides a benefit cap of 100% of a member's highest annual salary for elected officials after August 21, 2008	Inflation assumption increased from 2.5% to 3.0% General Wage assumption changed to 4.25% Changed amortization of UAAL from 40 years level dollar, to 20 years, level % of payroll	Employer contribution increased from 13.5% to 14.5% per schedule	HB3112 - Provides a 4% COLA for members who were retired as of June 30, 2007 SB1641 - Provides a benefit cap of 100% of a member's highest annual salary for elected officials after August 21, 2008
Firefighters	HB3112 - increased benefit for volunteers to \$7.53 per year of service	None	None	HB3112 - Provides a 4% COLA for members who were retired as of June 30, 2007; increased benefit for volunteers to \$7.53 per year of service SB 565 - Beginning July 1, 2010, the amount of insurance premium tax revenue apportioned to the System will be applied prior to the calculation of the Home Office Credit



Summary of Major Plan Changes (continued)

System	Benefit Provisions Assumption & Methods		Funding Metho	Legislative
Police	None	<p>Rates of termination, disability, retirement, and postretirement healthy mortality were updated to reflect actual experience</p> <p>Retiring members are assumed to retroactively elect to join DOP at their earliest back drop-date; DOP balance are assumed to accumulate at 7.75% prior to retirement; For periods before July 1, 2007, DOP balances will be included in the total assets for purposes of applying the asset smoothing method</p> <p>Base salary of a regular Police officer changed from 3.6% to 3.0% used to determine benefit increases</p>	None	<p>HB3112 - Provides a 4% COLA for members who were retired as of June 30, 2007</p> <p>SB 565 - Beginning July 1, 2010, the amount of insurance premium tax revenue apportioned to the System will be applied prior to the calculation of the Home Office Credit</p>
	None	None	None	<p>HB3112 - Provides a 4% COLA for members who were retired as of June 30, 2007</p> <p>SB 565 - Beginning July 1, 2010, the amount of insurance premium tax revenue apportioned to the System will be applied prior to the calculation of the Home Office Credit</p>
Law Enforcement	None	<p>Inflation assumption increased from 2.5% to 3.0%</p> <p>Investment return assumption increased from 7.25% to 7.5%</p> <p>General Wage assumption changed to 4.25%</p> <p>Retirement rates modified</p> <p>Post-retirement mortality updated to RP 2000 projected table</p> <p>Changed amortization of UAAL from 40 years level dollar, to 20 years, level % of payroll</p>	<p>Employer contribution increased to 7% per schedule</p>	<p>HB3112 - Provides a 4% COLA for members who were retired as of June 30, 2007</p>
Justices and Judges	None	<p>Inflation assumption increased from 2.5% to 3.0%</p> <p>Investment return assumption increased from 7.25% to 7.5%</p> <p>General Wage assumption changed to 4.25%</p> <p>Retirement rates modified</p> <p>Post-retirement mortality updated to RP 2000 projected table</p> <p>Changed amortization of UAAL from 40 years level dollar, to 20 years, level % of payroll</p>	<p>Employer contribution increased to 7% per schedule</p>	<p>HB3112 - Provides a 4% COLA for members who were retired as of June 30, 2007</p>
Wildlife	None	None	None	None



Retirement System Investment Return Assumptions

- Based on July 1, 2008 Actuarial Valuation Reports from Actuaries¹
- The assumed investment return assumption ranges from 7.5% to 8.0%
- Public Fund assumed investment return median is 8.0%²
- Distribution of investment return assumptions for surveyed funds below²

Actuarial Earnings Rate of Return on Plan Assets

Total Corporate and Public Funds (878) (836) (826)

	Base		Mean			Under 7.0%	7.0- 7.4%	7.5- 7.9%	8.0- 8.5%	8.6- 9.1%	9.2- 9.7%	9.8- 10.5%	Over 10.5%	No Answer/ Uncertain
	2005	2006	2004	2005	2006									
Corporate Funds (ex Unions)	(580)	(578)	8.3%	8.3%	8.2%	2%	7%	3%	41%	17%	1%	*%	0%	29%
Over \$5 billion	(82)	(92)	8.5	8.4	8.3	2	5	4	45	25	1	0	0	17
\$1-5 billion	(237)	(229)	8.3	8.3	8.1	2	10	3	41	20	*	0	0	24
\$501 million-\$1 billion	(145)	(147)	8.4	8.3	8.2	0	5	5	39	15	1	1	0	33
\$500 million and under	(116)	(110)	8.2	8.2	8.0	2	5	1	43	9	0	0	0	41
Public Funds	(225)	(219)	8.1%	8.1%	8.0%	*%	9%	10%	49%	5%	*%	1%	1%	24%
State	(83)	(81)	7.9	8.0	8.0	1	10	7	47	5	1	0	1	27
Municipal	(135)	(131)	8.3	8.2	8.1	0	8	11	52	5	0	2	2	21
Over \$5 billion	(68)	(69)	7.9	7.9	8.0	0	9	10	46	4	1	0	1	28
\$1-5 billion	(76)	(71)	8.1	8.1	8.0	1	10	8	51	8	0	0	1	20
\$501 million-\$1 billion	(35)	(41)	8.3	8.2	8.0	0	7	17	44	5	0	2	0	24
\$500 million and under	(46)	(38)	8.4	8.3	8.1	0	8	5	58	0	0	3	3	24
Union Funds	(31)	(29)	8.1%	7.9%	7.7%	0%	28%	10%	34%	7%	0%	0%	0%	21%
Total Funds	(836)	(826)	8.3%	8.2%	8.1%	1%	8%	5%	43%	14%	1%	*%	*%	27%

Note: Means exclude "None."

1. Buck Consultants, Milliman Consultants and Actuaries, and Gabriel, Roeder, Smith & Company

2. Greenwich Associates survey, 2007



Submission of Information to State Pension Commission

- During the 2002 legislative session, legislation was adopted that requires information be submitted to the State Pension Commission by the following Retirement Boards:
 - Teachers' Retirement System
 - OPERS Retirement System
 - Firefighters Retirement System
 - Police Pension and Retirement System
 - Law Enforcement Retirement System
 - Retirement System for Justices and Judges
- Valuations are performed, for informational purposes only, using a prescribed set of assumptions (70 O.S. 2001, Section 17-106.1, Section H) for all plans
 - Interest rate of 7.5%
 - COLA assumption of 2%
 - Mortality table of RP 2000
 - Set amortization period of 30 years (level dollar)



Submission of Information to State Pension Commission

Variations from State Prescribed Assumptions				
Prescribed Assumptions	Interest Rate = 7.5%	Cost of Living Adjustment = 2%	Mortality Table = RP2000 Generational	Amortization = 20 years (level \$)
Teachers	8.0%	x	1994 tables	30 year, level %
OPERS	x	x	x	20 years, level %
Firefighters	x	x	1994 tables	x
Police	x	COLA assumption of 33% to 50% of active payroll increases for some retirees, min. 2% increase	x	x
Law Enforcement	x	COLA assumption of 4% every other year, others assumed 3.25%	x	x
Judges	x	x	x	20 years, level %

- Use of a discount rate higher than 7.5% will produce lower liabilities
- Use of COLA assumptions lower than 2% will produce lower liabilities
- Use of older mortality tables assume people die younger, thus will produce lower liabilities



Submission of Information to State Pension Commission

Comparison of Valuation Results using State Prescribed Assumptions

System	Valuation Results Under Prescribed Assumptions				Actual Valuation Results	
	Required Contribution	Actual Contribution for Prior Year	Accrued Liability	Funded Status	Accrued Liability	Funded Status
Teachers	\$710.8	\$266.8	\$19,566.5	47.3%	\$18,347.0	50.5%
OPERS	\$295.0	\$220.1	\$9,079.2	71.5%	\$8,894.0	73.0%
Firefighters	\$116.1	\$53.2	\$2,876.9	63.2%	\$2,941.2	61.8%
Police	\$51.9	\$26.0	\$2,169.4	80.8%	\$2,132.2	82.2%
Law Enforcement	\$13.5	\$17.7	\$801.6	91.1%	\$881.3	82.9%
Judges	\$8.1	\$1.7	\$242.7	97.0%	\$244.1	96.4%



Conclusions

- Four of the seven Oklahoma state pension plans are considered well funded from a comparative standpoint
 - Median public fund plan is funded at 84.3%*
 - 62% of US public plans are funded over 80%*
- In aggregate, the State's plans are 60% funded
 - Teachers' plan is the least funded at 50%, also the largest plan
- Scheduled increases in employer contribution rates are in place for 3 of the plans
- Rating agencies will be scrutinizing States and Municipalities for debt ratings

* Results from the Public Fund Survey Summary Findings for FY 2007, published November 2008 by the National Association of State Retirement Administrators